



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
EMD/SHWB

December 2, 2009

S1157TM

**CERTIFIED MAIL NO. 7009 2250 0004 4923 5046  
RETURN RECEIPT REQUIRED**

Mr. Joseph Whelan, District Manager  
Waste Management of Hawaii, Inc.  
92-460 Farrington Highway  
Kapolei, Hawaii 96707

**CERTIFIED MAIL NO. 7009 2250 0004 4923 5022  
RETURN RECEIPT REQUIRED**

Mr. Timothy Steinberger, Director  
Department of Environmental Services  
City and County of Honolulu  
1000 Uluohia Street, Suite 212  
Kapolei, Hawaii 96707

Dear Messrs. Whelan and Steinberger:

SUBJECT: Comments on Expansion Permit Drawings  
Waimanalo Gulch Landfill

This letter supplements DOH letter dated September 25, 2009 and confirms our position during our meeting with Waste Management and City and County of Honolulu representatives on October 14, 2009. During our meeting, we noted that your application package has so many design changes and unresolved questions that it has become largely unmanageable, not to mention obsolete and inconsistent. As such, we requested that you resubmit your entire application package to reflect the landfill design you intend to pursue, thereby superceding all previous submissions.

We have since received additional information dated November 2, 2009, which we are currently reviewing. Although this submission is labeled as your permit application, it only responds to our previous letter dated September 25, 2009, and is not considered a new application as discussed in our meeting. We did not complete our review of this submission to update this letter. However, we decided to provide you with our comments on the previously submitted documents so that you may begin addressing

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our concerns, including those related to the design drawings, which were not submitted with your submission dated November 2, 2009.

Please submit a new application for your intended design and operation, including Attachments P-1 through P-6. You may use copies of Attachments P-5 and P-6 that were previously submitted to support this modification/renewal. Please be reminded that you are required to submit a copy of the Land Use Commission's Decision to supplement Attachment P-5. The zoning clearance Attachment P-5 may need to be revisited if the City and County sees any potential ramifications of the recent LUC decision. Please be reminded that you will be required to comply with your submitted application.

In your new permit application, please incorporate all of the comments made in our previous letters and our following comments as provided for these listed submissions-- *Permit Drawings, Cells E5 through E8, Waimanalo Gulch Landfill*, dated September 2009, which were received on September 18, 2009, along with *Technical Specifications, Cells E5 Through E8*, dated September 2009, and *Engineering Report Slope Stability Analyses For Cells E-5 and E-6 Interim Waste Fill Plans*, dated September 16, 2009. All were prepared by Geosyntec Consultants, Inc. Drawings for the eastern surface water drainage design and draft conceptual drawings for lower west side drainage project were received with the new submittal dated November 2, 2009, but have not been reviewed as yet. These drawings were prepared by GEI Consultants, Inc. We may provide additional comments on these drawings by separate correspondence.

Review of the permit drawings revealed that these drawings lack the details required to construct the cells, and, therefore, do not provide enough information to allow the DOH to determine adequacy with respect to environmental issues and state requirements for landfills, e.g:

1. Survey control point matrices for the base grades for cells E5 and E6 were not provided.
2. The extent, configuration, and elevations of the leachate removal sump cannot be determined because of the lack of elevation control points and horizontal and vertical dimensions. The compliance level cannot be determined. The sump area is required to have a double liner, if it is to have more than 12 inches of head. WMH has recently indicated a preference to duplicate sump risers and its placement on flat stock, as shown on the West Hawaii Landfill drawings, and in

the repair to the 4B sump riser problem. Please explain the change in preference, as we also preferred the redundancy and added protection.

3. The subdrain trench containing the 30-inch and 36-inch diameter HDPE pipes, intending to drain surface water from the upper reaches of the gulch, do not have invert elevations and details on how the HDPE pipes are to be supported.
4. Details of the connection of the new subdrain HDPE pipes to the existing 48-inch diameter corrugated metal pipes (CMPs) in the existing concrete channel are not provided. Portions (about 480 lineal feet) of the existing concrete channel and CMPs are to be removed, and the new subdrain HDPE pipes will connect to the existing CMPs downslope of the bottom of cell E6. Without invert elevations for the new subdrain trench and the existing CMPs, it is not known what elevation adjustments will be needed for the new HDPE pipes, which are running seven (7) feet below the cushion layer underlying the base liner, to meet the existing CMPs. It would appear that the HDPE pipes would need to rise up to meet the CMPs.
5. The subdrain trench design does not agree with the planned western drainage system that was previously presented in the *Engineering Report for Landfill Expansion*, prepared by Geosyntec, Inc., and dated March 12, 2008, and in the *Western Surface Water Drainage Project*, prepared by GEI Consultants, Inc. and dated June 2009. The installation of such a large (7 feet high by 12 feet wide) trench with pipes under the base liner was unexpected, and raises concerns including but not limited to the ability of the temporary stormwater drains to handle 25-year 24-hour storm flows. We assume that this portion of the stormwater system will be in operation before the entire western drainage system is constructed. In addition, the new HDPE surface drain pipe inlet details shown on sheet 12 show that compacted fill will be used to support the inlet structure. The grading drawings do not show the configuration of berms or other earthen structures that would be needed to serve as headwalls for the inlet structures. Since the existing surface drainage from above the landfill uses two 48-inch CMPs with about an 8 to 11 foot high headwall and an overflow channel above the pipes, it appears that the proposed 30-inch and 36-inch HDPE pipes may not be adequate to handle peak storm flows without an overflow capability. Please include the headwall design and explanation of how overflows will be avoided during peak flows in the updated drawings.
6. The submitted permit drawings for the temporary surface run-on drainage show 30-inch and a 36-inch running under the base liner in Cell E6 and connecting to

the existing 48-inch CMPs below the Cell E6 lower boundary. Drawings received via email on October 14, 2009 prepared by GEI Consultants, Inc. and forwarded via WMH show how the proposed 84-inch Hobas pipe of the western drainage system will tie into the existing concrete drainage channel under the area of the proposed stockpile. This drawing shows one 48-inch CMP will be cut and plugged, and a 36-inch HDPE pipe running out of the other 48-inch CMP. This leaves questions as to whether the 30 and 36-inch HDPE pipes are to connect to the existing 48-inch CMPs or are to run inside the CMPs, and what happened to the 30-inch HDPE pipe. Please clarify.

7. The east/west perimeter termination of the base liner in Cells E5 and E6 are not designed to prevent surface water infiltration under the liner, based on the drawing, Detail C/5. The liner terminates short of the 2 feet overlap from the upstream end of the bench, which will allow water to infiltrate through the operations layer to travel under the liner, which could impact the quality of liner downstream, particularly of existing lined sections. We suggest that the HDPE liner for the surface water ditch be extended to create a minimum of 2-feet overlap over the underlying liner system, to prevent surface water to seep beneath the liner. We note that the expansion liner system contains a lower 40-mil HDPE liner; however, the downstream Cells E-4 and 11 do not.
8. The LCRS drain pipe for cell E5 shown on sheet 3 runs to the eastern end of the cell and terminates without a means of leachate removal shown.
9. Details not provided for permanent anchor trench/liner termination at southern edge of cell E5, and surrounding surface water control system along the liner termination.
10. Drawings for E5/E6 plan show a different cell layout from the engineering report drawings in the original application. Even this engineering report for E5/E6 stability analysis makes reference to E5 to E11 as expansion cells while the referenced drawing only goes to E9. For permitting purposes, these descriptions need to be consistent.
11. The lack of the CQA for the West Berm does not allow DOH to review the construction of the berm, including the MSW cover layer beneath the berm and liner tie-ins. DOH requests that submittal of the CQA be packaged to reflect work done to date and submitted within 30 days of this letter.

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The above citations are not intended to constitute a comprehensive list, but are intended to provide sufficient evidence to support DOH's conclusion that the permit drawings submitted lack sufficient detail for oversight review and permit preparation purposes. All required design drawings and engineering analyses must be submitted before a permit can be issued. Since the western drainage system and the landfill cells are being constructed by two different contractors in accordance with different and independent sets of drawings, a sequencing and coordination plan should also be provided.

DOH will hold issuance of a permit for the landfill expansion in abeyance pending the receipt and review of the new application and associated documents and drawings.

Should there be any questions regarding this letter, please contact Thomas Miyashiro or Janice Fujimoto of our Solid Waste Section at 586-4226.

Sincerely,

  
STEVEN Y.K. CHANG, P.E., CHIEF  
Solid and Hazardous Waste Branch